

currently pending and under consideration.

II. REJECTION OF CLAIMS 48 AND 53 UNDER 35 U.S.C. 102(B) AS BEING ANTICIPATED BY DELAVALUX, ET AL.

The present invention as recited, for example, in claim 48 relates to a method for optical transmission adoption dispersion compensation, "providing a dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range, wherein, said optical amplifier comprises a front-stage amplifier and a rear-stage amplifier cascaded with each other...and said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier."

Delavaux discloses an optical communication system that uses adjustable dispersion compensating fibers to compensate for dispersion in system fibers. In Figures 1-4, Delavaux discloses a dispersion compensation unit 9 between a pre-amplifier 5 and an amplifier 7.

As indicated on page 2 of the Office Action, the Examiner believes that Delavaux discloses "a plurality of predetermined segment lengths in combination with optical amplifiers and a dispersion selected from a plurality of stepwise varying dispersions, which compensator is disclosed as locatable between pre- and post-amplifiers" referring to column 4, lines 57-63 of Delavaux.

However, it is respectfully submitted that Delavaux does not disclose the claimed feature in column 4, lines 57-63. In fact, Delavaux is silent about a dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions determined according to a predetermined range as recited in claim 48 of the present application.

Further, on page 2 of the Office Action, the Examiner states that in Fig. 4 of Delavaux, "the pre- and post-amplifiers are illustrated as a single unit and that the connection of the dispersion compensator between these elements is best seen in Figure 3."

While the above may be true, it does not suggest that Delavaux discloses an optical amplifier having a front-stage amplifier and a rear-stage amplifier with a dispersion compensator being provided between the front-stage amplifier and the rear-stage amplifier. As indicated in column 3, lines 31-32 of Delavaux, pre-amplifier 5 and amplifier 7 are single units with a dispersion compensation unit 9 provided therebetween. However, Delavaux does not disclose or suggest that either pre-amplifier 5 or amplifier 7 has a front-stage amplifier and a rear-stage amplifier with a dispersion compensator being provided between the front-stage amplifier and

the rear-stage amplifier as recited, for example, in claim 48 of the present application.

Therefore, Delavaux does not disclose the features as recited in claim 48 of the present application.

Similar to claim 48, claim 53 recites "providing a dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range, said dispersion compensator being provided between a front-stage amplifier and a rear-stage amplifier of said optical amplifier." Therefore, Delavaux does not disclose the features recited in claim 53 of the present application.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. REJECTION OF CLAIMS 48 AND 53 UNDER 35 U.S.C. 102(B) AS BEING ANTICIPATED BY ISHIKAWA, ET AL.

Ishikawa discloses an optical dispersion compensation method for shifting a zero dispersion wavelength of an optical fiber to compensate for dispersion in an optical system.

As indicated on pages 2-3 of the Office Action, the Examiner believes that Ishikawa discloses a dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions. Thus, the Examiner states that "insofar as the channel dispersion is a function of length, the dispersions are inherently determined according to the length of the connecting fibers, and thus to the range of the lengths."

However, Ishikawa does not appear to disclose a dispersion compensator that provides a dispersion selected from a plurality of stepwise varying dispersions determined according to a predetermined range as recited in claim 48 of the present application.

Further, on page 3 of the Office Action, the Examiner states that Ishikawa discloses repeaters 22, and dispersion compensator units 25 and 32 having pre- and post-amplifiers in Figures 39-41 of Ishikawa.

However, it is respectfully submitted to the Examiner that the pre- and post-amplifier in the dispersion compensator units 25 and 32 of Ishikawa is not the same as an optical amplifier having a front-stage amplifier and a rear-stage amplifier with a dispersion compensator being provided between the front-stage amplifier and the rear-stage amplifier as recited in claim 48 of the present application. Therefore, although Ishikawa discloses that dispersion compensator units 25 and 32 may be built in the repeaters 22, Ishikawa does not disclose or suggest that the repeaters 22 include a front-stage amplifier and a rear-stage amplifier for the dispersion

compensator units 25 and 32 to be provided therebetween.

Therefore, Ishikawa does not disclose the features as recited in claim 48 of the present application.

Similar to claim 48, claim 53 recites "providing a dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range, said dispersion compensator being provided between a front-stage amplifier and a rear-stage amplifier of said optical amplifier." Therefore, Ishikawa does not disclose the features recited in claim 53 of the present application.

In view of the above, it is respectfully submitted that the rejection is overcome.

IV. REJECTION OF CLAIMS 5-8, 20, 21, 61, 62, 22-24, 29-32, 36-46, 49-52, AND 55-58 UNDER 35 U.S.C. § 102(B) AS BEING ANTICIPATED BY CHRAPLYVY, ET AL.

The present invention as recited, for example, in claim 5 relates to a method for optical transmission adoption dispersion compensation, "providing a dispersion compensator in said optical amplifier, except when said optical amplifier corresponds to at least one end of said second segment."

Chraplyvy discloses an optical fiber communications system using compensating fibers for reducing chromatic dispersion.

The Examiner states that Chraplyvy notably anticipates an embodiment in which a dispersion shifted fiber segment is included among a plurality of segments.

However, Chraplyvy fails to disclose or suggest providing a dispersion compensator in an optical amplifier as recited, for example, in claim 5 of the present application. More specifically, the teachings of Chraplyvy in column 7, lines 15-17 or Figs. 1 and 2, do not indicate that a dispersion compensator is provided in an optical amplifier, except when the optical amplifier corresponds to at least one end of a second segment as recited in claim 5 of the present application. In other words, for example, when the claimed optical amplifier corresponds to one end of the second segment formed of the dispersion shifted fiber, the dispersion compensator is not provided. Chraplyvy does not disclose this feature. Therefore, Chraplyvy does not disclose or suggest the features as recited in claim 5 of the present application.

Similar to claim 5, claims 21, 29, and 36 also disclose that a dispersion compensator is provided in an optical amplifier, except when the optical amplifier corresponds to at least one end of the second segment. Therefore, Chraplyvy also does not teach or suggest the features

recited in claims 21, 29, and 36 of the present application.

Further, the present invention as recited, for example, in claim 20 relates to a system comprising "a dispersion compensator provided in said optical transmitter, except when said optical transmitter corresponds to at least one end of said second segment." Claim 22 relates to a system comprising "a dispersion compensator provided in said optical receiver, except when said optical receiver corresponds to at least one end of said second segment."

Chraplyvy discloses in Figs. 1 and 2, a dispersion compensation fiber provided in an optical transmitter and an optical receiver. However, Chraplyvy does not disclose whether or not the transmission fiber is composed of a single mode fiber and/or a dispersion shifted fiber. Therefore, Chraplyvy does not disclose that a dispersion compensator is provided in an optical transmitter, except when the optical transmitter corresponds to at least one end of a second segment (e.g., a dispersion shifted fiber) as recited in claim 20 of the present application. Also, Chraplyvy does not disclose that a dispersion compensator is provided in an optical receiver, except when the optical receiver corresponds to at least one end of a second segment (e.g., dispersion shifted fiber) as recited in claim 22 of the present application.

Similar to claim 20, claims 23, 39, 43, 49, and 55 also recite that a dispersion compensator is provided in an optical transmitter, except when the optical transmitter corresponds to at least one end of the second segment. Therefore, Chraplyvy does not disclose or suggest the features as recited in claims 23, 39, 43, 49, and 55 of the present application.

Similar to claim 22, claims 24, 42, 46, and 58 also recite that a dispersion compensator is provided in an optical receiver, except when the optical receiver corresponds to at least one end of the second segment. Therefore, Chraplyvy does not disclose or suggest the features as recited in claims 24, 42, 46, and 58 of the present application.

In view of the above, it is respectfully submitted that the rejection is overcome.

V. CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that each of the claims patentably distinguishes over the prior art, and therefore defines allowable subject matter. A prompt and favorable reconsideration of the rejection along with an indication of allowability of all pending claims are therefore respectfully requested.

If there are any additional fees associated with filing of this Response, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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